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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CHEU, CHANGHWA J	
ART UNIT	PAPER NUMBER
1641	

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DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/890,949	STENFLO, JOHAN	
	Examiner	Art Unit	
	Jacob Cheu	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16, 19-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16, 19-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's amendment filed on 3/20/2004 has been received and entered into record and considered.

The following information provided in the amendment affects the instant application:

1. Claims 17-18 are cancelled.

2. Affidavit (Rule 1.131 or 1.132) filed on 3/20/2004 has been received and entered into record.

2. Currently, claims 1-16, 19-26 are under examination.

Claim Rejections - 35 USC § 112

Scope of Enablement

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-16, 19-26 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for protein C inhibitor, does not reasonably provide enablement for any inhibitor. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

The instant invention claim 1, step (i), recites a monoclonal antibody "having specific affinity for a complex between a serine proteinase and *an* inhibitor thereof." It is believed that applicant refers to inhibitor of the serine proteinase. Nevertheless, the specification only provides one example on the asserted characteristics, namely protein C inhibitor (PCI). (See Figure 1-3, page 11, last paragraph; page 12, third and fourth paragraph) Inhibitors for serine proteinase are well-know and characterized in the art. (See pages 1-6 in the specification) However, inhibitors other than involving protein C inhibition have been

identified, such as zinc ion, phenylmethylsulphonyl fluoride (PMSF), or leupeptin. (See Egelrud US 5834290; Example 1, Table 2, Col. 34, line 35-50) Given the specific features of the monoclonal antibody recited in this invention, i.e. having affinity to both the complex of inhibitor/proteinase, and a cleaved/uncomplexed form of the inhibitor, the instant invention is entitled to the scope within the workable example, i.e. serine proteinase inhibitor (PCI), not with *any* protein inhibitor, such as non-protein C inhibitors. Similarly, claims 2, 6 and 22 share the same problem as claim 1.

Written Description

3. Claims 1-16, 19-26 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The instant claims are drawn to a monoclonal antibody having specificity for both (1) complex between serine proteinase and inhibitor thereof; and (2) a cleaved an uncomplexed form of said inhibitor, while having no specific affinity for said inhibitor in its uncleaved and uncomplexed form. However, the specification does not contain a written description of the invention in such full, clear, concise, and exact terms or in sufficient detail that one skilled in the art can reasonably conclude that applicant had possession of the claimed invention at the time of filing.

To provide adequate written description and evidence of possession of a claimed functional monoclonal antibody, the specification must provide sufficient distinguished identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or

chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, and any combination thereof. The specification discloses three serine proteinase inhibitors, i.e. alpha-antitrypsin, alpha-macroglobulin, and protein C inhibitor. (page 2, last paragraph)
The specification does not identify any particular portion of the structure on the complex of serine proteinase and its inhibitor or the cleaved/uncomplex inhibitor that must be conserved, nor does it provide a disclosure of structure/function correlation.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116). As discussed above, there are other serine proteinase inhibitors not involving in protein C inhibition, the skilled artisan cannot envision the detailed chemical structure of the encompassed genus of the entire serine proteinase inhibitors, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. (See Egelrud US 5834290; Example 1, Table 2, Col. 34, line 35-50) Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016. One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence. Therefore, only the recited two inhibitors are met written description requirement, i.e. protein C inhibitor and

alpha-antitrypsin, not the full breadth of the claim for "any serine proteinase inhibitor" meets the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-16, 19-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, step (i), "an inhibitor thereof" is vague and indefinite. It is not clear whether this inhibitor relates to the "protein C inhibitor", or do both have any relationship.

With respect to claim 1, step (ii), "a cleaved an uncomplexed form" is vague and indefinite. It is suggested that applicant changes to "a cleaved and uncomplexed form" for clarity. Similarly, claim 2 shares the same problem.

With respect to claim 1, line 9, "a derivative" is vague and indefinite. It is unclear what is "derivative" in the context, e.g. chemical modification, or recombinant substitution.

With respect to claim 1, line 2, "the same biological activity" is vague and indefinite. It is not clear what biological function applicant refers to, e.g. binding affinity, serine proteinase inhibitor, protein C inhibitor, or something else.

Response to Applicant's Arguments

6. Rejections of claims 1-16, 19-26 under 35 U.S.C. 112, first paragraph, scope of enablement are maintained.

Applicant provides four references asserting a monoclonal antibody capable of binding to antithrombin where the antithrombin is a serine proteinase inhibitor similar to protein C inhibitor. (See Remarks page 2, last paragraph) Applicant's arguments have been considered but are not persuasive. The crux of this scope of enablement rejection focuses on that not *any* serine proteinase inhibitor in complexing with the serine proteinase can be detected with the current recited monoclonal antibody. (emphasis added) Particularly, applicant reveals the problems in the prior art and stresses the important feature of involving protein C inhibitor activity. (See preamble of claim 1; page 5-7; Affidavit exhibit B) The examiner has pointed out that several serine proteinase inhibitors are not within the category of protein C inhibition in this Office Action. Supra. Therefore, the recited claims are not commensurate with the scope of the invention. Applicant's invention is not entitled for any serine proteinase inhibitor.

6. Rejections of claims 1-16, 19-26 under 35 U.S.C. 112, second paragraph, are maintained.

Applicant argues that "derivative" is a term generally recognized in the art. Applicant also provides a dictionary definition With respect to "derivative". (See Remark page 3, second paragraph) Applicant's argument has been considered but is not persuasive. As indicated in the previous and the current Office Action, "derivative" is a term denoting that some modifications have been added the existing substance. But, applicant do not provide any working sample illustrating to one skilled in the art as to how or what modifications can be done and preserve the "same biological activity". Examiner suggests that "fragment(s) thereof" may clarify the vagueness and confusion.

Conclusion

7. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Cheu whose telephone number is 571-282-0814. The examiner can normally be reached on 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jacob Cheu
Examiner
Art Unit 1641

June 7, 2004

LONG V. LE
SUPERVISORY PATENT EXAMINER
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06/14/04